Do parents of seabirds feed chicks with prey that is different from their own?

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Acknowledgements: JSPS, COE program (Neo-natural history), National Research Institute of Far Seas Fisheries
Diet for chicks
1) Easy to collect
2) Reflect fish community around the colony
3) Strong effects on breeding success

Diet of parents during breeding season?
Information of diet for parents own that may be different from chick diet gives us better understands of:

1) Consequence on reproduction
2) Impact on fish community
## Diet of alcids in Pacific


<table>
<thead>
<tr>
<th></th>
<th>Adult (breeding season)</th>
<th>Chick</th>
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</thead>
<tbody>
<tr>
<td>TBMU</td>
<td><strong>Walleye-pollock Euph Squid</strong></td>
<td><strong>Sand lance Polar-cod Blenny</strong></td>
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<tr>
<td>COMU</td>
<td><strong>Walleye-pollock Euph Amph</strong></td>
<td><strong>Smelt Blenny Walleye-pollock</strong></td>
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<tr>
<td>TFPU</td>
<td><strong>Walleye-pollock Sand lance Smelt</strong></td>
<td><strong>Sand lance Saury Smelt</strong></td>
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<tr>
<td>RHAU</td>
<td><strong>Sand lance?</strong></td>
<td><strong>Sand lance Anchovy Saury</strong></td>
</tr>
</tbody>
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Rhinoceros Auklet

Teuri Island
2004
Question

1) Do parents of Rhinoceros Auklets feed chicks with prey that is different from their own?

2) Prey for parents during incubation?

3) Any ecological implication?
Diet sample and analyses

- Blood sample
  - Stable isotope
- Average trophic level
  - No detailed information
- Bill-loads
- Stomach flushing
  - Stomach contents
- Detailed information
- Digestion bias
- Detailed information
Stomach flushing technique
Seasonal changes in the frequency occurrence(%) of each prey in stomachs (for parent own) and bill-loads (for chicks)
Stable isotope ratio ($N^{13}$) of blood of parents and potential prey
Summary

1) Parents fed on the same prey as chicks, though other studies indicate that parents bring larger fish for chicks

2) Parents fed on krill as well as fish during incubation period
Deguchi et al. 2004, Nakata per com

SST(Jun)

Air temp(Mar)

Krill catch

Timing of breeding

%Anchovy in chick diet

Chick growth

Deguchi et al. 2004, Nakata per com
Ecological implication

- Timing of breeding that does not always match with the timing of northern migration of anchovy. Factors affecting the timing of breeding, including krill availability, needs to be investigated.